UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,955	10/17/2003	Robert Alvin May	IPIN-0002	9856

7590 09/18/2008

David B. Ritchie
Thelen Reid & Priest, LLP
P.O. Box 640640
San Jose, CA 95164-0640

EXAMINER	
DUNN, DARRIN D	

ART UNIT	PAPER NUMBER
2121	

MAIL DATE	DELIVERY MODE
09/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/687,955	MAY, ROBERT ALVIN	
	Examiner	Art Unit	
	DARRIN DUNN	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,6,8-11,13-16,18-21,23-26,28-30,35 and 37-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,6,8-11,13-16, 18-21, 23-26, 28-30, 35, and 37-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the communication filed on 06/05/2008.

2. Claims 1,3,6,8-11,13-16, 18-21, 23-26, 28-30, 35, and 37-42 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 3-6, 8-11, 13-16, 18-21, 23-26, 28-30, 35, 37-40, and 42 are rejected under 35 U.S.C. 103(a) as being anticipated by Folkes et al. (USPN 2003/0218982) in view over J. Moy (Hitless OSPF Restart | February 2002), and in further view of Brucket et al. (USPN 20020049859)

7. As per claims 1 ,11, 21, and 35 Folkes et al. teaches a routing device ([FIG 2A -22]) comprising:

a dynamic routing module -24, operable to be executed at a particular time ([0024], [0026] e.g., backup protocol processor comprises a Backup OSPF-24, i.e., dynamic routing module, assumes control upon failover, i.e., particular time);

a configuration manager (as set forth in the instant application is a device that stores state information much the same as the backup OSPF instance), coupled to a second routing device -21, operable to store configuration information associated with operational characteristics of a second dynamic routing module -23 associated with the second routing device -21 ([0027],[0029], [FIG 2B- 22] e.g., backup OSPF instance, i.e., configuration manager, stores state information corresponding to the active protocol processor, i.e., second dynamic routing module. This is accomplished via synchronization);

a network information module, operable to store routing information from the second routing device ([0039] e.g., network information module, i.e., LSA database)

wherein said dynamic routing module is executed upon an indication that the second dynamic routing module is no longer operating ([0007, [0026] e.g., the terminology "no longer operating" is interpreted as a failure –OSPF router fails);

wherein said dynamic routing module -24 is configured to operate according to said configuration information ([0027] e.g., backup OSPF instance executes recovery functions and assumes the functionality as the former active OSPF instance).

Folkes et al. discloses a communication module operable to transmit a hitless restart ([FIG 2A-24] e.g., operable is interpreted as "capable of being put into use, operation, or practice. In the instant case, the Backup OSPF module is capable of implementing the OSPF enhancements for hitless restart as depicted in J. Moy (page 1 paragraph "in a nutshell, the OSPF enhancements

for a hitless restart are as follows…".). Moreover, Folkes et al. teaches a routing device configured to route information for the cluster ([0005], [0008] OSPF router implements an algorithm to calculate packet forwarding table information….forwarding tables route transit traffic through a shared central switch fabric. As backup instance of the active, it is interpreted that the router will continue to route information upon replacing the active instance.)

However, Folkes et al. does not teaches transmitting a hitless restart event based upon an event associated with said execution of said dynamic module, said hitless restart event signaling network enabled devices to continue forwarding packets to a cluster of network enabled devices. J. Moy teaches transmitting the aforementioned limitations ([page 2 lines 1-5] e.g., router announces intention to perform a hitless restart, and asking for a "grace period.", i.e., transmitting a hitless restart, and neighbors continue to announce the restarting router in the their LSAs as if it were fully adjacent, i.e., continuing to forward packets. It is implied that maintaining adjacency during a failover will function to continue routing packets).

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to implement a hitless restart by incorporating the OSPF enhancements as taught by J. Moy. Routers implement a separation of control and forwarding functions as to allow packet forwarding in the event control software is restart/reloaded. Given the potential that the control software in Folkes et al. may be restarted, it would have been advantageous to modify Folkes et al. to further maintain its data forwarding capability by implementing a hitless restart. One of ordinary skill in the art would have been capable of applying the known method of hitless restart as to further achieve seamless data forwarding as taught by Folkes et al. ([0026 lines 4-6])

However, Folkes, as modified, does not teach where each of the network enabled devices in the cluster being accessed through a single network address. Brucket et al. teaches that cluster configurations provide a unique address referred to as a cluster ID [0039].

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to modify Folkes et al. to provide a single network address, i.e., cluster ID. Clustering builds redundancy in the system where multiple devices are used, and ideally clusters provide continuous service. By providing a cluster ID for each and every device, duplicate addresses are avoided.

8. As per claims 3, 13, 23, and 37, Folkes et al. teaches the device of claim 1 wherein said dynamic routing module implements an OSPF routing protocol ([0024] e.g., OSPF).

9. As per claims 4, 14,24, and 38, Folkes et al. teaches the device the routing device of claim 1 wherein said particular time is associated with a non-functioning state of the second dynamic routing module ([0026] e.g., in the event the active protocol processor fails, implying the active OSPF instance is no longer capable of functioning).

10. As per claims 5, 15, 25, and 39, Folkes et al. teaches the routing device of claim 1 wherein said particular time is associated with a predetermined time ([0026] e.g., maintenance, i.e., particular time).

11. As per claims 6,16, 26, and 40, Folkes et al. teaches the wherein said particular time is associated with network traffic ([0018] e.g., TCP failure).

12. As per claims 8, 18, 28, and 42, Folkes et al. teaches the routing device of claim 1, wherein at least a portion of said stored configuration information is stored in a device different from said routing device ([FIG 2A] e.g., active OSPF instance –23 is a device different that that

of the backup OSPF instance –24, i.e., routing device. According to [0029], the active OSPF instance maintains its current dynamic state, network interface state information, etc).

13. As per claim 10, 20, and 30, Folkes et al., as modified, teaches the routing device of claim 1 further comprising a communications module ([0052]-retransmit mechanism) operable to receive a reply from another routing device associated with the receipt of a hitless restart ([0052] e.g., in response to the Hello packets, a response is expected. The association is any indirect relation to a device receiving a hitless restart signal. Thus, a Hello message suffices to be associated with the recipient device receiving a hitless restart signal).

14. As per claims 21 and 35, Folkes et al., as modified, teaches a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method, the method comprising:

storing configuration information associated with operational characteristics of a second dynamic routing module associated with a second routing device (supra claim 1 configuration manager in association with active/backup instance…as set forth in the instant application is a device that stores state information much the same as the backup OSPF instance) ;

storing routing information from the second routing device (supra claim 1, synchronization of active instance with backup instance);

configuring said first routing device according to said configuration information (supra claim 1, configuration manager implementing synchronization of data);

upon an indication that the second dynamic routing device is no longer operating, selectively routing datagrams through said first routing device (supra claim 1, active instance failure, where the backup OSPF initialization is interpreted as a selective selection, and/or the routing of

datagrams using a forwarding table implies a selection because packets are forwarded using forwarding tables, i.e., selective routing);

and transmitting a hitless restart event, said hitless restart event signaling network enabled devices to continue forwarding packets to a cluster of network enabled devices, said routing device configured to route information for the cluster (supra claim 1 discussion)

Response to Amendment

15. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. The basis of the withdrawal is due to the potential U.S.C 101 rejection, which was withdrawn after further consideration. Applicant's current amendment, not previously presented, changes the scope of the independent claim that necessitates the final rejection. The current Office Action is made final in response to the newly added amendment.

U.S.C 101 Rejection: Withdrawn

Statutory Double Patenting: Withdrawn

Response to Arguments

16. Applicant's arguments filed 06/05/2008 have been fully considered but they are not persuasive. First, the Examiner is open to discussing via an interview how the "signaling mechanism" is not taught by J. Moy. By signaling (e.g., indicating) that the sender is alive,

devices are in effect provided an indication that packet forwarding should continue. J. Moy addresses maintaining a router's data forwarding capability while the router's control software is restarted. J. Moy teaches that that the router attempting a hitless restart announces the intention to perform a hitless restart. During the grace period, routers continue to announce the restarting router in the LSA such that packet forwarding continues. It is understood that the hitless restart indicates that forwarding should continue to occur during the grace period.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN DUNN whose telephone number is (571)270-1645. The examiner can normally be reached on EST:M-R(8:00-5:00) 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DD
09/13/08

/Albert DeCady/
Supervisory Patent Examiner
Art Unit 2121